AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A tunable filter with a wide free spectral range, comprising:

a first collimator;

a second collimator with one end opposed to the first collimator, wherein a high reflectivity layer is coated on the end of the second collimator; and

a micro-electromechanical system-based (MEMS-based) reflector ~~mirror~~ interposed between the first collimator and the second collimators, the reflector comprising a base, an aperture defined on the base, and a multi-layered film with high reflection capability formed on the base and extending over the aperture, wherein the multi-layered film extending over the aperture serves as a curved lens, ~~with an appropriate tilt angle and a high reflectivity lens, whereby~~ and a resonance cavity is defined ~~in a space~~ between the ~~mirror~~ curved lens and the second collimator.

2. (Currently Amended) The tunable filter as claimed in claim 1, wherein the tunable filter ~~using~~ is a heat-actuated type filter ~~actuator has a mirror coated with a multi-layer membrane on a concave lens on opposite side of an aperture on a substrate; where~~ and the multi-layered ~~membrane~~ film is formed with alternate layers of GaAs and AlAs.

3. (Currently Amended) The tunable filter as claimed in claim 1, wherein the tunable filter ~~using~~ is an electrostatic-actuated type filter, ~~actuator has a mirror coated with a multi-layer membrane on a concave lens surface on opposite side of an aperture on a substrate; wherein the mirror has a dielectric layer and an electrodelayer formed on top of the mirror forming air~~

~~pockets on opposite side of the aperture on the substrate and the concave lens surface of the mirror~~, and the MEMS-based reflector further comprises a dielectric layer and an electrode layer sequentially formed on the base, both the dielectric layer and the electrode layer have an opening corresponding to the aperture.

4. (Currently Amended) The tunable filter as claimed in claim 3, wherein the multi-layered ~~membrane~~ film is formed by alternate layers of GaAs and AlAs.

5. (Currently Amended) The tunable filter as claimed in claim 3, wherein the multi-layered ~~membrane~~ film is formed by alternate layers of TiO_2 and SiO_2.

6. (Currently Amended) The tunable filter as claimed in claim 1, wherein the first collimator has one end extending towards the second collimator, wherein an anti-reflection layer is coated on the end of the first collimator ~~coating on the lens surface~~.

7-8. Cancelled